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ABSTRACT

The development and norming of a Spanish language edition of the United States Employment Service (USES) General Aptitude Test Battery (GATB) is described. The new edition, called the Bateria de Examenes de Aptitud General (BEAG), was designed to replace an earlier translation, the BGPA, prepared for use in Puerto Rico. Forms A and B were developed to have identical item content with the GATB except for Part 1 (Name Comparison) and Part 4 (Vocabulary) which required Spanish names and vocabulary rather than English. Experimental procedures, norms samples, and results are described for an administration of the tests to bilingual groups of high-school seniors and adults with less than high school education. Item analysis indicated a number of items in Part 4 were unsatisfactory. A revised edition was prepared and a second comparability study was performed. Another study was performed to compare the BEAG with the BGPA. (CTM)

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Manual for the Batería de Exámenes de Aptitud General [BEAG]

U.S. Department of Labor
Employment and Training Administration

Section II
Development
1977

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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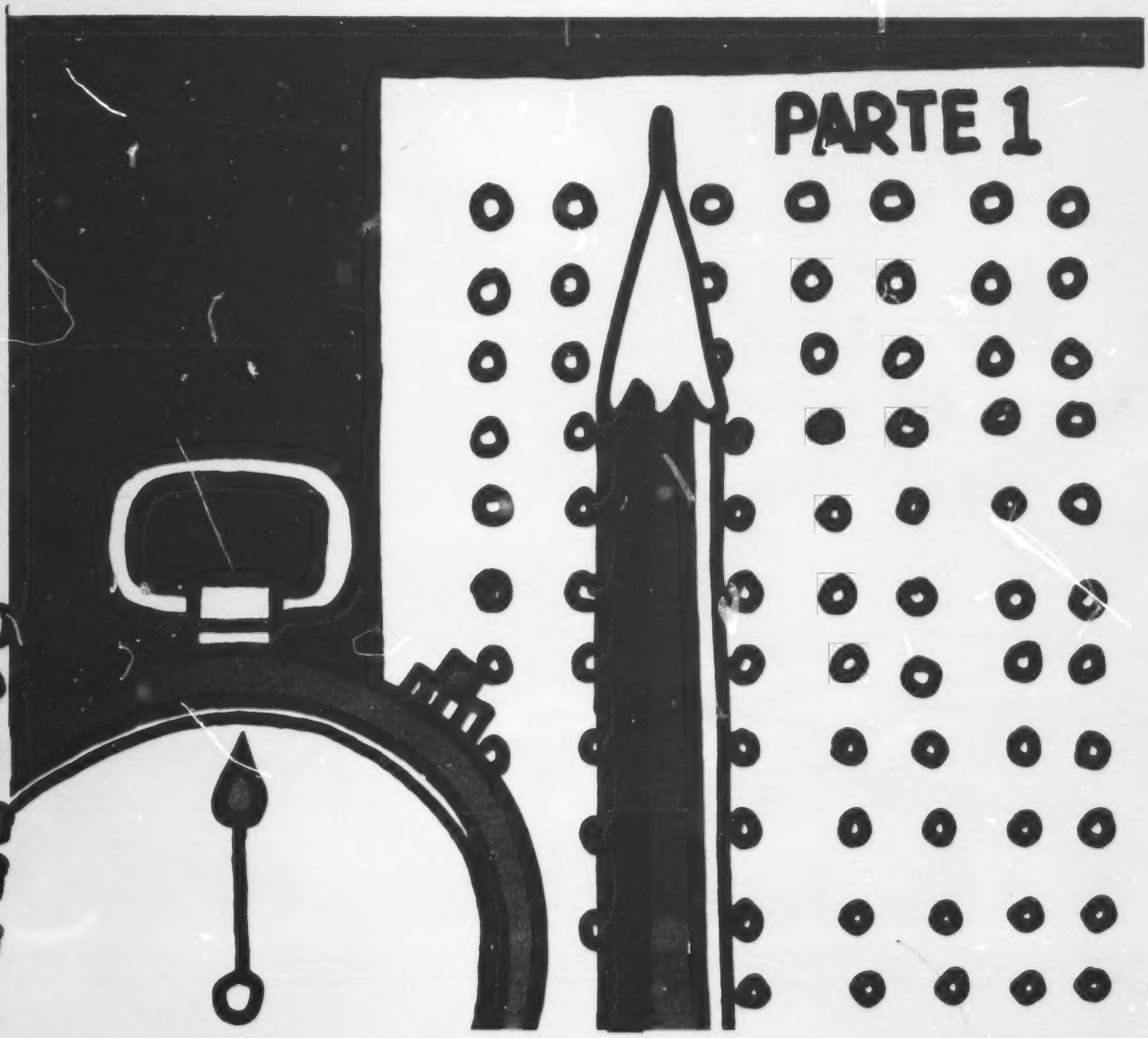

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Manual for the Batería de Exámenes de Aptitud General [BEAG]

Section II
Development

U.S. Department of Labor
Ray Marshall, Secretary

Employment and Training Administration
Ernest G. Green
Assistant Secretary of Labor
for Employment and Training
1977

ACKNOWLEDGMENTS

Development of the Batería de Exámenes de Aptitud General (BEAG) was done in cooperation with the following State employment services: Arizona, California, Colorado, District of Columbia, Florida, Idaho, Illinois, Louisiana, Michigan, Minnesota, Nevada, New Jersey, New Mexico, New York, Oregon, Puerto Rico, Texas, Washington, Wisconsin, and Wyoming.

Because of its continuing interest in test development for Spanish-speaking applicants, the California agency participated in planning and conducting all phases of the test development effort to develop a new Spanish language edition of the GATB, including preparation of the experimental designs and coordination of the data collection. Much of the credit for the successful completion of the project is due to the efforts of Lillian Avery, Manager, and Margaret Walker, John González, Raúl Nazario, and Margaret Scott of the California Test Research Field Center.

The New York agency, in addition to their participation in various phases of the BEAG development, summarized the results of the nationwide tryout and made recommendations for the final edition. This was a difficult task competently done by Albert Vega and Dominick Carminati of the New York agency.

A key role in the development of the BEAG was played by personnel of the Puerto Rico agency. Their participation in several phases of the research made it possible to make the BEAG acceptable for use by Puerto Rico and mainland testing personnel who had previously used the BGPA. Particular mention is made of the fine contributions of Gladys V. Colón and Zenaida Rivera, who helped in developing the final consensus in areas where it was difficult to achieve agreement in the working of the directions for administration.

Special thanks are due Patricia Ramos and Socorro Castañeda of the California Test Research Field Center who spent untold number of hours typing, editing, and proofreading the BEAG manual and test materials.

AGRADECIMIENTO

La Batería de Exámenes de Aptitud General (BEAG) fue desarrollada en cooperación con los siguientes servicios de empleo estatal: Arizona, California, Colorado, District of Columbia, Florida, Idaho, Illinois, Louisiana, Michigan, Minnesota, Nevada, New Jersey, New Mexico, New York, Oregon, Puerto Rico, Texas, Washington, Wisconsin y Wyoming.

Debido al interés constante en el desarrollo de exámenes para los solicitantes de habla hispana, la agencia de California participó en el planeamiento y dirección de todas las fases del esfuerzo del desarrollo de exámenes para la elaboración de una nueva edición de la GATB en la

lengua española. Esto incluyó la preparación de diseños de experimento y la coordinación de colección de datos. Mucho mérito del éxito de este proyecto finalizado se debe a los esfuerzos de Lillian Avery, Gerente, y Margaret Walker, John González, Raúl Nazario y Margaret Scott del "California Test Research Field Center".

La agencia de Nueva York, además de su participación en varias fases del desarrollo de la BEAG, resumió los resultados del experimento llevado a cabo por toda la nación e hizo recomendaciones para la edición final. Esta fué una tarea difícil competentemente concluída por Albert Vega y Dominick Carminati de la agencia de Nueva York.

El personal de la agencia de Puerto Rico desempeñó un papel importante en el desarrollo de la BEAG. Su participación en varias fases de la investigación sistemática y científica hizo posible que el uso de la BEAG fuera aceptable por el personal de exámenes en Puerto Rico y los Estados Unidos Continental, quienes anteriormente habían usado la BGPA. Mención especial se debe a las contribuciones excelentes de Gladys V. Colón y Zenaida Rivera, quienes asistieron en llegar a un consentimiento final en las áreas donde era difícil lograr un acuerdo relativo a las palabras de las instrucciones para la administración.

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FOREWORD (GATB)

The General Aptitude Test Battery (GATB) was developed by the United States Employment Service, and has been used since 1947 by affiliated state employment service offices. Since that time the GATB has been included in a continuing program of research to validate the tests against success in many different occupations. Because of its extensive research base, the GATB has come to be recognized as the best validated multiple aptitude test battery in existence for use in vocational guidance.

The GATB has proved to be a valuable tool in the measurement of aptitudes of job applicants and of candidates for occupational training. However, many Spanish-speaking individuals who need vocational counseling and remedial services to help them become employable, and who are monolingual Spanish-speaking, or who have limited knowledge of the English language are not able to take the GATB because of a language barrier.

In 1955, research was conducted by Puerto Rico to develop a Spanish language edition of the GATB for use with their population. This research resulted in the Batería General de Pruebas de Aptitud (BGPA). In 1965, the California State Employment Service initiated new research to develop a Spanish language version of the GATB for use with the Spanish-speaking population in the Southwestern United States. The California project was later expanded to developing a translation suitable for use with the Spanish-speaking population throughout the United States mainland and Puerto Rico. Comparability and tryout research studies, involving the participation of twenty state employment service agencies, including Puerto Rico, were carried out under the auspices of the United States Employment Service during the period 1968 to 1975.

This Manual presents the Spanish language edition of the GATB, the Batería de Exámenes de Aptitud General (BEAG).

The Batería de Exámenes de Aptitud General (BEAG) Manual is published in two separate sections, as follows:

Section I, Administration and Scoring, contains the procedures for administration and scoring of the BEAG, and conversion of the raw test scores to aptitude scores.

Section II, Development, contains technical information on the development of the BEAG.

Users of the BEAG should also have the following sections of the GATB Manual for information on norms and their development:

Section II, Norms, Occupational Aptitude Pattern Structure, shows the GATB Occupational Aptitude Pattern Structure which is used for counseling purposes.

Section III, Development, contains technical information on the development of the GATB.

Many schools and other organizations, both public and private, have been authorized to use the GATB for counseling and research. Information regarding release of the BEAG for these purposes may be obtained from State Employment Services.

PREFACIO (BEAG)

La General Aptitude Test Battery (GATB) fue desarrollada por el Servicio de Empleo de los Estados Unidos, y se ha usado desde 1947 por las oficinas afiliadas del Servicio de Empleo Estatal. Desde ese tiempo, la GATB ha sido incluída en un programa continuo de investigación sistemática y científica para convalidar los exámenes según el éxito en muchas ocupaciones diferentes. A causa de la amplia base de la investigación sistemática y científica, la GATB ha sido reconocida como la mejor convalidación de exámenes de múltiples aptitudes en existencia para uso como guía vocacional.

Se ha comprobado que la GATB es un instrumento importante para medir las aptitudes de los solicitantes de empleos y para los candidatos de instrucción ocupacional. Sin embargo, muchos individuos de habla hispana quienes necesitan orientación vocacional y servicios remediales para ayudarles a ser empleables, y que solamente hablan el español, o que tienen un conocimiento limitado de la lengua inglesa, no pueden tomar la GATB por falta de comprender el inglés.

En 1955 una investigación sistemática y científica fue llevada a cabo por Puerto Rico para desarrollar una edición de la GATB en la lengua española para el uso de su población. Esta investigación resultó en la Batería General de Pruebas de Aptitud (BGPA). En 1965 el Servicio de Empleo Estatal de California inició una nueva investigación sistemática y científica para el desarrollo de una versión de la GATB en la lengua española para el uso de la población de habla hispana en el oeste de los Estados Unidos. Más tarde el proyecto de California fue ampliado para desarrollar una traducción adecuada para el uso de la población de habla hispana en todos los Estados Unidos y Puerto Rico. Las investigaciones sistemáticas y científicas sobre los análisis de comparabilidad y experimento, incluyendo la participación de veinte agencias de servicio de empleo estatal y Puerto Rico, fueron llevadas a cabo bajo los servicios del Servicio de Empleo de los Estados Unidos durante los años 1968 a 1975.

Este Manual presenta la edición de la GATB en la lengua española, la Batería de Exámenes de Aptitud General (BEAG).

El Manual de la Batería de Exámenes de Aptitud General (BEAG) se publica en dos secciones por separado:

Sección I, Administración y Calificación, contiene los procedimientos para administrar y calificar la BEAG, y para la conversión de las calificaciones en crudo del examen a las calificaciones de aptitud.

Sección II, Desarrollo, contiene información técnica sobre el desarrollo de la BEAG.

Los que usan la BEAG también deben tener las siguientes secciones del Manual de la GATB para información sobre las normas y su desarrollo.

Sección II, Normas, la Estructura del Modelo de Aptitud Ocupacional, enseña la Estructura del Modelo de Aptitud Ocupacional de la GATB, la cual se usa para los propósitos de aconsejar.

Sección III, Desarrollo, contiene información técnica sobre el desarrollo de la GATB.

A muchas escuelas y otras organizaciones, tanto públicas como privadas, se les ha dado la autoridad para usar la GATB en aconsejar individuos y para hacer investigaciones sobre este tema ocupacional. Se puede obtener, del Servicio de Empleo Estatal, información en relación a la libertad de uso de la BEAG para estos propósitos.

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INTRODUCTION

The 1965–66 USES Advisory Panel for Occupational Test Development discussed the possible need for a new Spanish language edition of the GATB for use in the Southwest. The following recommendation is from the Panel's final report:

> "On the basis of information developed within the resources of the Panel, it is recommended that a Spanish edition be derived from the present Puerto Rican edition, with supporting occupational norms, as a more practical alternative as compared to a period of instruction in English followed by use of the standard GATB."

In order to obtain specific and detailed information on need for a new Spanish language edition of the GATB, a survey was made in June 1967 of five State Employment Services in the Southwest: California, Arizona, Texas, Colorado, and New Mexico. Results from the survey indicated that (1) there were a great many Spanish-speaking applicants for entry jobs or occupational training who could not read and understand English well enough to take the GATB, (2) for most of these, GATB testing would be appropriate if a suitable Spanish language edition were available, (3) the Puerto Rican edition of the GATB (BGPA) was not suitable for most of these applicants, and (4) a new Spanish language edition of the GATB was needed in the Southwest.

TRANSLATION AND TRYOUT OF THE BATERIA DE EXAMENES DE APTITUD GENERAL (BEAG)

TRANSLATION

In 1970, personnel of the California State Employment Service prepared a Spanish language translation of the entire GATB, including the *Manual for the General Aptitude Test Battery, B–1002,* Section I: Administration and Scoring; Test Booklets I and II, Forms A and B; Part 2; and the GATB Screening Exercises.

TRYOUT PLAN

A design was developed by the California agency to evaluate the translation in the five southwestern States with sizeable Spanish-speaking populations: Arizona, California, Colorado, New Mexico, and Texas. Each State was to assume the responsibility of evaluating the translated versions of the GATB Directions for Administration for Parts 1 through 12.

Each participating State was to have a sample composition of both monolingual (Spanish-speaking) and bilingual (those who spoke Spanish and English) males and females who passed the Spanish translation of the GATB Screening Exercises, a short screening test of relatively simple vocabulary and three-dimensional space items. Only individuals who had not previously been tested with the GATB and who had sufficient education to understand oral directions and verbal content of the GATB translation were to be selected for the study.

The test administration directions were to be given by experienced test examiners fluent in Spanish. Only Spanish-speaking proctors who had training in GATB test administration were to assist with the study. Different methods of conducting the administration session were suggested by the design in order to encourage the participation of the examinees in the identification of words, phrases, and concepts unfamiliar to them during the administration of the test.

It was suggested that the examinees actually perform the exercises to motivate them during test sessions. There was to be no need for scoring the exercises because the research would be concerned only with the adequacy of the administration directions.

GATB Screening Exercises (Parts I and II), translated into Spanish, were to be given to each individual before inclusion in the test session. Problems of understanding were also noted here.

The original design called for each State in the study to assemble a panel of language experts to evaluate the results of the administration tryouts. In the interest of saving time, the design was modified so that only the key State (California) would assemble such a panel, representative of the American Southwest, which could evaluate the tryout results from all five States and could make final corrections to the translation.

SAMPLE DESCRIPTION

Five States participated in the study, as follows: California (key State), Colorado, New Mexico, Arizona, and Texas. There were a total of 34 sessions: California, seven; Texas, five; New Mexico, six; Colorado, eleven; and Arizona, five. A total of 315 individuals were screened by the five States, and 40 of these were dismissed for a variety of reasons. The final sample used for the evaluation consisted of 275 individuals, distributed as indicated in Table 1.

The data in Table 1 indicate these sample characteristics: (1) a relatively even representation of males and females, bilinguals and monolinguals, (2) a wide range of age and (3) a low average education, but with some representation of higher education levels. It seems reasonable to conclude that the sample characteristics were appropriate for a comprehensive tryout of the new directions.

CONDUCT OF THE TRYOUT

In the Spring of 1971, the participating States administered the experimental Spanish language General Aptitude Test Battery to the 34 groups of monolingual and bilingual individuals.

A variety of methods were used to elicit examinee comments and suggestions regarding the test directions. In some sessions examinees were permitted to interrupt at will to ask questions and make comments. In other sessions comments were permitted only at the end of each exercise or only at the end of the testing session.

A specially designed columnar table was developed for tabulation of word, phrase, and concept variables identified in the testing sessions. It combined data from the five States participating in the study. This table served

Table 1

Sample Characteristics and Number of Cases for Each State (Tryout Study)

State	Number of Cases				Age			Education		
	M	F	Bilingual	Monolingual	M	SD	Range	M	SD	Range
Arizona	20	30	25	25	28.4	10.1	17–52	7.1	2.7	3–14
California	49	39	39	49	30.4	8.9	16–50	9.1	3.3	3–18
Colorado	21	32	48	5	33.7	10.0	18–58	8.9	3.5	2–17
New Mexico	14	15	29	0	31.3	12.9	17–63	10.4	2.8	4–14
Texas	29	26	27	28	30.8	11.6	17–58	6.5	2.5	1–12
Total	133	142	168	107	30.8	10.6	16–63	8.3	3.3	1–18

as the raw materia[1] for the panel of experts who evaluated the Spanish instructions for the purpose of modifying or changing those words and phrases which were unclear or misunderstood. It was felt that combining data from the five States on one master table would facilitate the evaluation process in that a broad spectrum of the entire problem could easily be discerned. A review of the data singled out no particular geographical area in which the Spanish language was radically different from that in other areas. The Southwestern States, where Spanish is spoken, read, and written, are quite homogeneous in the usage of the Spanish language.

REVIEW PANEL

Assistance from the community in Los Angeles was requested. A panel of six individuals was chosen who were fluent in Spanish and who dealt primarily with the Spanish-speaking population in their daily business affairs. It was felt that a composition of such a panel would offer an excellent cross section of problems encountered with individuals of different educational levels, different environmental factors, and peoples from countries other than the United States. A further goal was that some of the panel members would have had experience in dealing with people throughout the southwestern United States. As a result of these considerations, individuals were chosen from the field of Radio—writing and commentary in Spanish; Newspaper—editing, writing and translating; Unions—negotiating and solving problems by direct communication with the public segment; Schools—a teacher with experience in teaching individuals at all grade levels in Spanish or a combination of Spanish and English; Services—two persons dealing with the general public in Spanish and also with employers and other agencies. The educational level of each panel member was another consideration to maintain a balance between members who were highly proficient in the Spanish language and those who spoke more nearly like the general public, especially the Mexican-American.

The panel was assembled for the purpose of reviewing the data collected from the total sample of 275 males and females of the five combined States so as to arrive at an acceptable translation. The panel met for the initial review of the translated instructions into Spanish on July 14, 1971 and completed the overall evaluation of these instructions on July 29, 1971 in two separate sessions. At the outset it was agreed among themselves that the evaluation should be treated in terms of usage throughout the southwestern United States.

CONCLUSIONS

A. Screening Procedures

As a screening device, Parts I and II proved to be inadequate. Individuals with a low educational level and limited reading ability were screened in. It was usually discovered during the first and second practice exercises of the GATB that such persons were having great difficulty grasping the meaning of the instructions. Some were excused from the test session while others were apparently kept to avoid embarrassment on their part. The conclusion that can be drawn from this situation is that, since only one problem of each part must be correct to pass the screening exercises, the act of guessing correctly any one of the parts could very well come into play, especially if the individual later claimed that he was unable to read the instructions. The selection based on the screening exercises was further compounded by two possible correct answers to Part II, line 2, as reported by

the participating states. California recognized this problem and resolved it before attempting to screen for a test session.

An interesting result of this research study was the fact that, within the monolingual group, there were those individuals who had good command of reading and writing the Spanish language as well as those who had had no formal education in that language and were therefore unable to understand the Spanish directions in written form. Within the bilingual group those individuals educated in the United States received no formal training in the Spanish language and, although they spoke Spanish, they were unable to understand the written contents. Further, within this bilingual segment of the Spanish-speaking population, there were those with a deficient education in English. As a consequence, they could not be administered the GATB in either of its written forms.

B. Spanish Translation of the General Aptitude Test Battery

Reports based on the various tryout sessions indicated that the translated instructions into Spanish from English were satisfactory and easily understood. The instructions for the apparatus tests did contain words that were unfamiliar to many in the sample. However, there was agreement that, through association by watching the administrator manipulate the items in question, they were able to understand the significance of the instructions, especially since these words were repeated several times during the practice exercises. The panel members concurred that the translation was feasible for use throughout the southwestern United States. Those changes or modifications made to the translation of the instructions were to ensure clarity and simplicity for the greatest number of Spanish-speaking individuals residing in the southwestern United States.

The conclusions reached by the panel members was that the revised translation was effective and accurate, suitable for use in standardization and in operations.

BROADENING APPLICABILITY OF THE BEAG

After the tryout of the experimental Spanish General Aptitude Test Battery was completed in the Southwest, consideration was given to the possibility of doing additional development to broaden the applicability of the tests to Spanish-speaking individuals throughout the mainland United States, and possibly Puerto Rico. Two steps were taken in this direction. First, copies of the final version of the directions resulting from the Southwest tryout were sent to the New York, Illinois and Puerto Rico agencies for their comments. Second, it was decided to include Puerto Rico and other State agencies in addition to the Southwest states in the study "Comparability of Spanish and English Language Versions of GATB Part 1 and 4," providing a broad data collection base for this phase of the test development project. As a result of taking these two steps, it was possible to (1) incorporate additional changes in the directions to give them broader applicability in testing Spanish-speaking applicants from a variety of backgrounds and (2) develop a more comprehensive national data base for the conversion tables resulting from the comparability study.

COMPARABILITY OF SPANISH AND ENGLISH LANGUAGE VERSIONS OF GATB PARTS 1 AND 4 (STUDY 1)

INTRODUCTION

Forms A and B of the experimental Spanish language version of the GATB had item content identical to their English language GATB counterparts except for Part 1 (Name Comparison), Part 4 (Vocabulary) and Part 6 (Arithmetic Reasoning). Part 1 had Spanish rather than English language names, Part 4 had Spanish rather than English language vocabulary, and Part 6 was an item-for-item Spanish language translation of GATB Part 6.

In the cases of Parts 1 and 4, it could not be assumed that raw scores on the Spanish and English language versions were comparable. Very likely the difficulty levels of the Spanish and English language versions of Part 1 differ because the names to be compared were different. Although an attempt was made at item-for-item, word-for-word English to Spanish translation in Part 4, it is likely that differences in word usage resulted in differences in difficulty levels of the two versions of Part 4. Thus, studies of comparability of the Spanish and English language versions of Parts 1 and 4 were required in order to establish appropriate aptitude conversion tables for these tests.

The problem of comparability did not exist for the other tests. In the case of Part 6, the change from the English language version was translation of the directions for administration and the test items themselves, but without change in essential meaning of the items. In the case of the other tests, the only change was translation of the directions for administration. The items themselves had no verbal content and remained the same as in their English language counterparts. Since it was reasonable to assume that no changes in difficulty level result from the English-to-Spanish translation, the same test-to-aptitude conversion tables would apply as in the English language GATB.

PROCEDURE

Each participating State agency was asked to obtain samples of bilingual individuals who could pass both Spanish and English language alternate forms of the GATB Screening Exercises, consisting of sample items from Part 3—Three Dimensional Space, and Part 4—Vocabulary of the GATB. Two samples were to be obtained by each participating State agency, as follows:

Sample A: At least 50 high school seniors. The objective was to obtain a sample of individuals who would be able to take the GATB in either Spanish or English without difficulty.

Sample B: At least 30 individuals age 17 or older with less than 12 years of education. The objective was to obtain a less educated bilingual group of individuals who have at least a minimum amount of literacy in both English and Spanish. Possible sources of individuals included employed workers, MDTA trainees, local office applicants, WIN or CEP clients.

At each testing site the group to be tested was to be divided into equal sized Groups 1 and 2. This division was to be done at random, but separately for males and females so that each group would have the same number of males and the same number of females. One possible technique suggested was to make separate alphabetically arranged lists of the names of the males and females and make alternate assignments to Groups 1 and 2 starting at the top and working down for each list. Alternate approaches were permitted so long as there was no danger of a systematic bias that would lead to arriving at groups that would not be comparable. The critical importance that (1) a random procedure be established in advance of any allocation to Group 1 or 2 and (2) this procedure be followed rigidly in making the allocations was stressed.

Once an individual had been assigned to Group 1 or Group 2, he/she was to be retained in it for purposes of definition of the group, data processing and analysis. Even if he/she subsequently dropped out before or during the testing, the data available was to be tabulated. Thus, Groups 1 and 2 were to be equal in size, but the two groups would not necessarily have the same number

of individuals with complete data.

The testing schedule, identical for Samples A and B, was as follows:

Order of Administration	Group 1	Group 2
First	Special edition of Spanish language Screening Exercises (Parts I and II) followed by alternate form (Form B) of English language Screening Exercises (Part II only) followed by the Language Usage Indicator	
Second	Parts 1 and 4 Form A (English)	Parts 1 and 4 Form A (Experimental Spanish)
Third	Parts 1 and 4 Form B (English)	Parts 1 and 4 Form B (Experimental Spanish)
Fourth	Parts 1 and 4 BGPA Form A	Parts 1 and 4 BGPA Form A

The tests were to be administered with the NCS answer sheet in accordance with the standard directions prepared for them. The tests themselves (second, third and fourth items in the order of administration) were to be administered in a single test session. The Screening Exercises (first item) and the Language Usage Indicator were not required to be administered as part of the testing session.

The tests were to be scored in accordance with standard procedures. Scores were also to be obtained on each set of the Screening Exercises. Data were to be tabulated on 80-column tabulation sheets in accordance with instructions provided.

Each participating State agency was to prepare a technical report describing the conduct of the study, including information on selection and characteristics of samples, procedures used for randomization into the two groups, number of individuals tested at each site, number of individuals screened out through application of the Screening Exercises, problems in test administration, and any other information that would be pertinent in interpreting the results of the study.

After completion of data collection, data tabulation, and preparation of the report, the materials were to be forwarded to the National Office. The National Office was to do the data processing on combined samples and analyze the results.

The testing instruments were as follows:

A. GATB Screening Exercises: These consist of sample items from the GATB vocabulary and spatial tests. Their purpose is to determine whether an individual has sufficient literacy skills to take the GATB.

Spanish language Screening Exercises

Part I: Translation of English language Screening Exercises, Part I: Spatial

Part II: Translation of English language Screening Exercises, Part II: Vocabulary

English language Screening Exercises

Part II (Form B): An alternate form of the the English language Screening Exercises, Part II: Vocabulary

B. English language GATB Tests

Part 1, B–1002A and B: Alternate forms of Name Comparison Test, which measures Aptitude Q (Clerical Perception).

Part 4, B–1002A and B: Alternate forms of Vocabulary Test, which measures Aptitude V (Verbal Aptitude) and G (General Learning Ability).

C. Spanish language GATB Tests

Part 1, Experimental Spanish, Forms A and B: Spanish name versions of GATB, B–1002A and B, Part 1.

Part 4, Experimental Spanish, Forms A and B: word-for-word translation of GATB, B–1002A and B, Part 4.

Part 1, BGPA: Spanish name Puerto Rican edition of GATB, B–1002, Part 1.

Part 4, BGPA: Spanish word Puerto Rican edition of GATB, B-1002, Part 4.

D. Language Usage Indicator

This was an adaptation of a questionnaire used in a study by Patella (1971). It was designed to obtain information on Spanish language background and usage.

SAMPLES

Table 2 shows the number of cases in the final samples for the States participating in the study.

Note that, in addition to the five southwest States with large Mexican-American populations, two eastern States and Puerto Rico were included to sample the Puerto Rican Spanish-speaking population in the East. An attempt was made to obtain data also in Florida to include individuals of Cuban origin, but this was unsuccessful. Table 3 shows descriptive statistics for age, education and sex for the combined samples from all locations.

Table 2

Number of Cases in Final Samples (First Comparability Study)

State	N
Arizona	69
Colorado	70
New Jersey	83
New York	102
California	134
Puerto Rico	60
Texas	83
New Mexico	91
Total	692

Table 3

Descriptive Statistics for the Combined Samples

	High School Seniors		Low Education Adults	
	Group 1 (N=206)	Group 2 (N=196)	Group 3 (N=143)	Group 4 (N=147)
Age				
Mean	18.00	17.98	27.47	27.50
S.D.	.99	.87	8.68	9.40
Education				
Mean	11.51	11.57	9.14	9.38
S.D.	.59	.54	2.04	2.13
Sex				
Percent Male	42	44	48	48

The statistics are shown separately for the four analysis groups (Groups 1 and 2—high school seniors; Groups 3 and 4—low education adults). Note that there is good comparability between Groups 1 and 2 and between Groups 3 and 4 with respect to age, education and sex. The Language Usage Indicator provided measures of Spanish and English language use in various settings, variables useful in establishing comparability between Groups 1 and 2 and between Groups 3 and 4. Table 4 shows the percentage distributions of the four groups on the six Language Usage Indicator items.

An inspection of the data in Table 4 shows the bilingual character of the sample, with some important differences in language preference between the high school senior and low education adults. Although both groups tend to prefer using Spanish when conversing with parents, there is a tendency for the high school seniors to prefer English when conversing with friends in the neighborhood. This is no doubt partly a function of the greater use of English in schools by the high school senior group. The form of Spanish used was predominately Mexican, Mexican-American or Puerto Rican, with only

Table 4

Percentage Distributions on Language Usage Indicator Items

Language Usage Indicator Items	High School Seniors		Low Education Adults	
	Group 1 (N=206)	Group 2 (N=196)	Group 3 (N=143)	Group 4 (N=147)
1. Language used speaking with parents:				
English	21	23	6	5
Spanish	49	52	68	76
Both	30	26	27	19
2. Form of Spanish you & parents speak:				
Central American	1	2	3	5
Cuban	2	2	5	6
Mexican	18	21	10	16
Mexican American	48	47	41	31
Puerto Rican	26	23	33	33
South American	2	3	3	3
Other	2	2	5	7
3. Language used with friends in neighborhood:				
English	51	49	16	16
Spanish	13	14	36	46
Both	37	36	48	38
4. Language spoken in schools:				
English	62	61	45	42
Spanish	3	5	31	34
Both	34	34	24	24
5. Number of radio programs listened to in Spanish:				
None	28	32	17	16
Some	66	62	56	52
More than half	4	5	13	17
All	2	2	14	15
6. Number of Magazines and papers read in Spanish:				
None	46	43	32	26
Some	48	48	52	55
More than half	6	8	6	12
All	0	1	9	7

12% of the sample using another form. With respect to comparability in language usage between Groups 1 and 2 and between Groups 3 and 4, it is apparent that quite good comparability was achieved.

Another basis for establishing comparability for the comparison groups consists of performance in the Spanish and English language screening Exercises. Table 5 shows the means and standard deviations of scores (number right) on the screening exercises used in this study. None of the differences between Groups 1 and 2 or between Groups 3 and 4 is significant.

Table 5

Means and Standard Deviations of Scores on Spanish and English Language Screening Exercises

GATB Screening Exercises	High School Seniors				Low Education Adults			
	Group 1 (N = 206)		Group 2 (N = 196)		Group 3 (N = 143)		Group 4 (N = 147)	
	M	SD	M	SD	M	SD	M	SD
Spanish Language:								
Part I—Spatial	2.67	.65	2.67	.64	2.57	.66	2.51	.70
Part II—Vocabulary	3.46	.81	3.51	.82	3.48	.84	3.61	.71
English Language:								
Part II—Vocabulary	3.23	.82	3.27	.87	2.68	.99	2.71	.89

RELIABILITY ANALYSIS

The results, in terms of alternate form reliability data for Parts 1 and 4, are shown in Tables 6 and 7. Each of these tables provide a comparison of statistics (means, standard deviations and reliability coefficients) for GATB Parts 1 and 4 vs. their BEAG counterparts.

Table 6

Means and Standard Deviations of Raw Scores on Forms A and B of Parts 1 and 4, and Product Moment Correlations Between Alternate Forms for High School Senior Group 1 (English language GATB) and Group 2 (Spanish language BEAG)

Part	Group 1 (N = 206) GATB-English			Group 2 (N = 196) BEAG-Spanish		
	M	SD	r	M	SD	r
Part 1, Form A	45.4	10.4		40.6	9.8	
			.82			.78
Part 1, Form B	49.8	11.4		46.5	11.5	
Part 4, Form A	17.0	6.2		14.2	5.8	
			.80			.67
Part 4, Form B	16.2	6.4		12.2	5.0	

Table 7

Means and Standard Deviations of Raw Scores on Forms A and B of Parts 1 and 4, and Product Moment Correlations Between Alternate Forms for Low Education Adults Group 3 (English language GATB) and Group 4 (Spanish language BEAG)

	Group 3 (N = 143) GATB-English			Group 4 (N = 147) BEAG-Spanish		
Part	M	SD	r	M	SD	r
Part 1, Form A	30.1	10.3		33.2	11.5	
			.82			.81
Part 1, Form B	39.3	11.9		37.3	12.7	
Part 4, Form A	10.9	5.9		13.1	5.8	
			.81			.82
Part 4, Form B	10.4	5.1		11.2	5.8	

With one exception, the alternate form reliability coefficients are within .02 correlation points of .80 for both English and Spanish versions of Parts 1 and 4. The exception is the .67 reliability coefficient for BEAG, Part 4 in the high school senior group, which is considerably lower than the reliability of .82 found in the low education adult group.

Additional data bearing on reliability of BEAG Parts 1 and 4 is provided by the correlations between these tests and BGPA Parts 1 and 4 for Groups 2 and 4. These correlations are shown in Table 8.

Table 8

Product—Moment Correlations Between BGPA Parts 1 and 4 and Their BEAG Counterparts

Part	Group 2 (N = 196)	Group 4 (N = 147)
Part 1, Form A	.78	.83
Part 1, Form B	.85	.86
Part 4, Form A	.67	.81
Part 4, Form B	.83	.84

These correlations are quite similar to those between Forms A and B of the BEAG shown for Groups 2 and 4 in Tables 6 and 7.

We may conclude that the reliabilities of Spanish language versions of Parts 1 and 4 compare quite favorably with reliabilities of GATB Parts 1 and 4, except that some improvement in reliability would be desirable for Part 4, BEAG, on high school senior groups.

ITEM ANALYSIS, BEAG PART 4

Item analysis was conducted on all 180 Part 4 Spanish language items in BEAG Forms A and B and BGPA Form A. This was done for the following reasons:

1. To obtain an objective check on the adequacy of individual BEAG items, which are word-for-word translations of Part 4 GATB items. Such a check was desirable because of the possibilities that translations of the words from English to Spanish would result in critical differences in meaning, leading to changing the character of an item from one with a clear-cut correct answer to one which has no correct answer or one which has more than one correct answer. Information on difficulty level and relationship between item and total test performance would provide an objective basis for evaluating adequacy of each test item.
2. To determine the extent to which the items appear in order of ascending difficulty. Although the GATB Part 4 items were ordered empirically on the basis of difficulty level, it could not be assumed that the Spanish translation of these items would retain the same order for a Spanish-speaking sample.

3. To make it possible to substitute BGPA items for BEAG items with poor discriminating power, based on appropriate item statistics.

Tables 9 and 10 show the distribution of difficulty and discrimination levels of the items in BEAG Form A, BEAG Form B, and the BGPA. All three tests show a wide range in item difficulty level and item discrimination level.

Table 9

Distribution of Item Difficulty Levels (p Values) for the Three Spanish Language Versions of Part 4—Vocabulary

(Groups 2 and 4—N = 343)

p Value	BEAG Form A	BEAG Form B	BGPA
.00–.09	2	3	0
.10–.19	15	11	4
.20–.29	13	11	13
.30–.39	6	12	10
.40–.49	6	8	11
.50–.59	4	6	8
.60–.69	4	3	7
.70–.79	4	4	5
.80–.89	4	2	1
.90–.99	2	0	1
Totals	60	60	60

Six of the items in BEAG Form A and three items in BEAG Form B have negative or .00 discrimination indexes. An attempt was made to replace the BEAG problem items with BGPA items which showed adequate discrimination power and had similar difficulty levels. Table 11 shows the statistical data supporting the recommended substitutions.

The data in Table 11 indicate that it was possible to substitute BGPA items with good discriminating power for BEAG items with .00 or negative discriminating power.

It was not possible to achieve a one-to-one matching of eliminated and substituted items with respect to difficulty level, but the net effect of the substitutions on the mean and standard deviation of scores would not be large. (Since the difficulty levels of the substituted items tend to be somewhat lower than difficulty levels of the eliminated items, the average scores would be slightly higher for the revised Part 4. The lower difficulty levels

Table 10

Distribution of Item Discrimination Levels ($R_{p\ bis}$) for the Three Spanish Language Versions of Part 4—Vocabulary

(Groups 2 and 4—N = 343)

$R_{p\ bis}$	BEAG Form A	BEAG Form B	BGPA
.20–.11 (neg)	2	2	0
.10–.01 (neg)	3	1	1
.00–.09	5	2	2
.10–.19	5	11	3
.20–.29	10	11	5
.30–.39	19	12	14
.40–.49	12	13	20
.50–.59	4	8	13
.60–.69	0	0	2
Totals	60	60	60

together with the probable higher intercorrelation of the substituted items would tend to decrease slightly the standard deviation of the revised Part 4.)

DEVELOPMENT OF CONVERSION TABLES

Data from the high school senior Groups 1 and 2 were used as the basis for development of tables for converting raw scores on BEAG Parts 1 and 4 to equivalent scores on GATB Parts 1 and 4. Separate Group 1 and Group 2 percentile distributions of scores on Forms A and B of Part 1 and Part 4 were obtained and equipercentile graphs were plotted for each of the four variables (Part 1 Form A, Part 4 Form A, Part 1 From B, Part 4 Form B). Linear equations based on Group 1 and Group 2 means and standard deviations of the four variables (see Table 6) were also developed and the corresponding lines were superimposed on the equipercentile graph.

The results were nearly identical, indicating that a linear conversion of scores from Spanish to English equivalents would be appropriate.

Table 12 shows the values for "a" and "b" used to convert raw scores on BEAG Parts 1 and 4 to equivalent scores on GATB Parts 1 and 4.

The aptitude scores corresponding to each BEAG Part 1 and Part 4 raw score were obtained by (1) substituting the BEAG raw scores in the appropriate BEAG-GATB test conversion equations, (2) solving for the GATB equivalents, and (3) noting the GATB aptitude scores derived from these raw score equivalents. The tables for

Table 11

Proportion of the sample passing the Item (p) and Point Biserial Correlation ($R_{p\ bis}$) Between Item and Total Score for Part 4 Items Eliminated from the BEAG and Part 4 Items Substituted from the BGPA.

Form	Eliminated BEAG Part 4 Items			Substituted BGPA Part 4 Items		
	Item No.	p	$R_{p\ bis}$	Item No.	p	$R_{p\ bis}$
A	10	.16	−.10	48	.24	.52
A	26	.41	−.10	31	.23	.12
A	43	.26	.00	44	.32	.44
A	46	.12	−.06	40	.25	.28
A	54	.11	−.02	8	.33	.40
A	55	.13	.00	57	.32	.41
B	27	.02	−.14	56	.16	.33
B	48	.10	−.04	13	.13	.18
B	55	.01	−.10	15	.19	.46

converting raw scores on BEAG Parts 1 and 4 to aptitude scores are shown in section 1 of the BEAG Manual.

Table 12

Values of "a" and "b" for use in Equation $X_e = aX_o + b$ for Converting Raw Scores on BEAG Parts 1 and 4 (X_o) to Equivalent Scores on GATB Parts 1 and 4 (X_e)

Part	a	b
Part 1, Form A	1.059	2.377
Part 1, Form B	.986	3.958
Part 4, Form A	1.063	1.850
Part 4, Form B	1.274	.619

Mean Aptitude V (Verbal Aptitude) and Q (Clerical Perception) scores for the high school and low education adult samples are shown in Table 13. These mean scores indicate that (1) comparability of aptitude scores for the high school senior Groups 1 and 2 has been achieved and (2) low education adults tend to score somewhat better on the BEAG than on the GATB.

DISCUSSION

As indicated in Table 13, the bilingual high school senior groups have identical average scores on Spanish and English language editions of the GATB for Aptitude V and for Aptitude Q. However, it is not necessarily true that a given individual's scores would be the same or nearly the same on the Spanish and English editions. The correlations between BGPA and GATB measures of Aptitude Q (.76 and .81) are high enough to accept the scores as adequate measures of Aptitude Q whether administered in Spanish or in English. But this is not the case for Aptitude V because correlations between BGPA and GATB measures of Aptitude V (.22 and .09) are much too low to have confidence that results of testing in the Spanish and English editions would not differ substantially for bilingual high school seniors. Thus, Spanish-speaking high school seniors who have been educated primarily in the English language should ordinarily be tested with the GATB rather than the BEAG. However, when individuals who have had substantial English language education are tested with the BEAG, Form A, it may be useful to administer, in addition, the GATB, Part 4, Form B, C, or D as a check on Verbal Aptitude. Bilinguals with low education should ordinarily be tested with the BEAG because their Aptitude V and Q scores average higher when tested with the BEAG than when tested with the GATB.

Based on the research conducted to develop it, including the attempt to broaden its applicability to individuals with a variety of Spanish language backgrounds, the BEAG appeared ready for nationwide operational use. However, the following additional research was needed

to improve the BEAG and to evaluate its adequacy in local office operations:

1. The low education bilingual adults tend to score higher on the BEAG than on the GATB for both Parts 1 and 4. This was to be expected, and provides a basis for using the BEAG for bilinguals when they have less than a high school education. However, the GATB-BEAG differences in average Aptitude Q scores are 9 points for Form A but only 3 points for Form B. An additional check study on Part 1 would be useful to check on the conversions.
2. The substitution of strong BGPA items for weak BEAG items improves the BEAG's Part 4 measurement qualities but may have some measurable effect on the BEAG-GATB Part 4 conversions. In addition, the BEAG items are not in strict order of increasing difficulty. The present study should be replicated using the revised BEAG Part 4, Forms A and B, with items listed in order of difficulty.
3. A nationwide operational evaluation of the BEAG should be conducted to determine whether additional changes in the directions for administration and use of the tests are needed.

Table 13

Mean Aptitude V and Q Scores for High School Senior and Low Education Adult Samples

			High School Seniors		Low Education Adults	
Part	Form	Aptitude	Group 1 (N=206)	Group 2 (N=196)	Group 3 (N=143)	Group 4 (N=147)
1	A	Q	107	107	89	98
1	B	Q	136	136	117	120
4	A	V	94	94	82	92
4	B	V	92	92	81	90

COMPARABILITY OF SPANISH AND ENGLISH LANGUAGE VERSIONS OF GATB PARTS 1 AND 4 (STUDY 2)

INTRODUCTION

Results from Comparability Study 1 provided a basis for tables to convert raw scores on Parts 1 and 4 of the BEAG to aptitude scores. These conversion tables were used in a nationwide operational tryout of the BEAG conducted to determine what revisions would be desirable in the directions for administration. It was also decided to conduct a second study on comparability of BEAG and GATB Parts 1 and 4. The reasons for a second study were as follows:

1. The BEAG Part 4—Vocabulary measure used in the original study was item analyzed, and strong items from the Puerto Rican Batería General de Pruebas de Aptitud (BGPA) were substituted for weak BEAG items. The measurement characteristics of the revised test, with items reordered by difficulty level, could have some measurable effect on (1) conversions of BEAG Part 4 scores to Aptitude scores and (2) reliability of measurement as indicated by the correlation between scores on Form A and Form B.
2. The average GATB-BEAG score difference on Aptitude Q for a low education bilingual group was 9 points for Form A but only 3 points for Form B. A second study was desirable to make any adjustments that may be necessary in the conversions.

PROCEDURE

The procedure was much the same as that used for the high school senior portion of the original study.

As in the original study, each participating State agency was to obtain a sample of at least 50 bilingual high school seniors. The objective was to obtain a sample of individuals who would be able to take the GATB in either Spanish or English without difficulty.

The procedure for dividing the sample to be tested at each site into equal sized Groups 1 and 2 was the same as in the original study. This division was to be done at random, but separately for males and females so that each group would have the same number of males and the same number of females.

The testing schedule was as follows:

Order of Administration	Group 1	Group 2
First	Parts 1 and 4 Form B (GATB)	Parts 1 and 4 Form B (BEAG)
Second	Parts 1 and 4 Form A (GATB)	Parts 1 and 4 Form A (BEAG)

Note that the order of administration (Form B—Form A) is the reverse of the order in the original study.

The testing instruments used were the same as in the original study except that (1) the GATB Screening Excercises and the Language Usage Indicator were not used, (2) the item-analyzed versions of BEAG Part 4, Forms A and B were used, and (3) either the NCS or Intran answer sheet could be used.

SAMPLES

Table 14 shows the number of cases in the final samples for the States participating in the study.

Table 14

Number of Cases in Final Samples (Second Comparability Study)

State	N
Arizona	33
California	84
Colorado	88
Florida	50
New Jersey	68
New Mexico	51
New York	60
Texas	53
Total	487

Note that, as in the first comparability study, it was possible to obtain representation from both East and

West. One of these eastern States was Florida, not represented in the original study. All of the individuals from Florida were of Cuban origin.

Table 15 shows descriptive statistics for age, education, and sex for the combined samples from all locations. The two groups are comparable with respect to age and sex charateristics.

Table 15

Descriptive Statistics for the Combined Samples

	Group 1 (N = 250)	Group 2 (N = 237)
Age		
Mean	17.01	16.96
S. D.	1.01	1.00
Sex		
Percent Male	40	42

RELIABILITY ANALYSIS

The results, in terms of alternate form reliability data for Parts 1 and 4, are shown in Table 16. This table provides a comparison of statistics (means, standard deviations and reliability coefficients) for GATB Parts 1 and 4 vs. their BEAG counterparts.

The reliability coefficients for the Spanish language BEAG Parts 1 and 4 are in the .80's and are the same size as the reliability coefficients for GATB Parts 1 and 4. We may conclude that the reliabilities of the final editions of BEAG Parts 1 and 4 are excellent.

MODIFICATION OF CONVERSION TABLE

The results from the second comparability study, in terms of differences between means and standard deviations of scores on English and Spanish versions of Parts 1 and 4, are quite similar to those from the first study, on which the aptitude conversion tables were based. The one exception relates to BEAG Part 4, Form B. The standard deviation of scores for this test was quite low (5.0) in the original study, and in addition the Form A—Form B reliability of scores was considerably lower for BEAG Part 4 than for GATB Part 4. In the second study the standard deviations of BEAG and GATB versions of Part 4, Form B are more nearly the same and the reliability of scores is the same (.86) for BEAG and GATB version of Part 4, Form B. Therefore, it appears reasonable to modify the conversion table for BEAG Part 4, Form B using data for the second study. This was done, and the revised equation for converting raw scores on BEAG Part 4, Form B to equivalent scores on GATB, Part 4, Form B is as follows: $Xe = .932Xs + 4.3298$.

Table 16

Means and Standard Deviations of Raw Scores on Forms A and B of Parts 1 and 4, and Product-Moment Correlations Between Alternate Forms for Group 1 (English language GATB) and Group 2 (Spanish language BEAG)

	Group 1 (N = 250) GATB-English			Group 2 (N = 237) BEAG-Spanish		
Part	**M**	**SD**	**r**	**M**	**SD**	**r**
Part 1, Form B	41.5	10.0		39.5	10.2	
			.81			.80
Part 1, Form A	50.2	12.0		45.4	11.7	
Part 4, Form B	16.1	6.1		12.7	6.6	
			.86			.86
Part 4, Form A	17.1	6.3		14.4	6.0	

COMPARABILITY OF BEAG AND BGPA VERSIONS OF GATB PARTS 1 AND 4

INTRODUCTION

The Batería General de Pruebas de Aptitud (BGPA) is the Puerto Rican Spanish edition of the GATB which was used in Puerto Rico and also on the mainland to some extent since 1955. In 1965 a Puerto Rico standardization of the BGPA was completed which resulted in test-aptitude conversion tables based on data from a sample of the Puerto Rico General Working Population. This standardization results in aptitude scores which have a mean of 100 and a standard deviation of 20 for the Puerto Rico General Working Population sample (U.S. Department of Labor, 1965).

Can the conversion tables developed for the BGPA be used with BEAG tests? The answer to this question depends on the comparability of the tests in the two editions. It is reasonable to conclude that such comparability exists for all tests except Part 1 and Part 4, which consist of different items in the two Spanish versions of the GATB.

In the course of conducting the first BEAG-GATB comparability study on Parts 1 and 4, data were collected permitting comparison of BEAG and BGPA scores of individuals in the samples obtained. These data provide some evidence that raw scores on BEAG Parts I and 4 are comparable to scores on BGPA Parts 1 and 4, respectively. However, the Puerto Rico sample for the study was not large and there may be some question of whether effects of practice were controlled sufficiently to permit firm conclusions in this regard. Accordingly, a special study was designed to provide the basis for an answer to this question.

PROCEDURE

The study was conducted in two locations. Counselees were tested with the entire BEAG for purposes of operational tryout and with the BGPA Parts 1 and 4 for the purpose of obtaining data on BGPA and BEAG comparability for these two tests. To control the effects of practice, the counselees were divided randomly into two groups and tested in the following order:

Group 1	Group 2
BEAG—Part 1	BGPA—Part 1
BGPA—Part 1	BEAG—Part 1
BEAG—Parts 2–3	BEAG—Parts 2–3
BEAG—Part 4	BGPA—Part 4
BGPA—Part 4	BEAG—Part 4
BEAG—Parts 5–12	BEAG—Parts 5–12

Random procedures were used at each office for allocation of counselees to Groups 1 and 2, and this was done separately for males and females. The tests were administered by a professional counselor at each of the two testing sites. The number tested was 50 in Group 1 and 50 in Group 2, with each group consisting of equal numbers of males and females. Table 17 shows the sample characteristics for the two groups. These data indicate that the two samples are comparable with respect to age, education, and sex characteristics.

Table 17

Descriptive Statistics for Puerto Rico Sample

	Group 1 (N = 50)	Group 2 (N = 50)
Age		
Mean	22.60	22.60
S. D.	6.29	5.51
Education		
Mean	11.52	11.58
S. D.	1.17	1.04
Sex		
Percent Male	50	50

RESULTS

Table 18 shows the result in terms of a comparison of Groups 1 and 2 with respect to means, standard deviations and reliability coefficients of Parts 1 and 4.

A comparison of the statistics for the two groups in-

dicates that there is good comparability between BEAG and BGPA versions of Parts 1 and 4. Although it appears from these data that BEAG Part 4 may be slightly easier than BGPA Part 4, no such difference was found in the first BEAG-GATB comparability study. Therefore, no adjustment appears to be required in either Part 1 or Part 4 conversion tables for Puerto Rico when the BEAG is used there.

Table 18

Means and Standard Deviations of Raw Scores on BGPA and BEAG Parts 1 and 4, Form A, and Product Moment Correlations Between BGPA and BEAG Editions of these Tests for Groups 1 and 2

	Group 1 (N = 50)				Group 2 (N = 50)		
Part	M	SD	r	Part	M	SD	r
BEAG Part 1	32.8	10.8		BGPA Part 1	32.0	11.6	
			.75				.74
BGPA Part 1	40.7	10.5		BEAG Part 1	41.1	9.9	
BEAG Part 4	14.4	4.9		BGPA Part 4	12.5	6.1	
			.87				.82
BGPA Part 4	15.9	8.1		BEAG Part 4	15.2	6.0	

NATIONWIDE OPERATIONAL TRYOUT OF THE BEAG

TRYOUT PLAN

The original design developed by the National Office called for the evaluation of the BEAG to be conducted concurrently with its operational use in State ES offices throughout the country. Every State agency which had been using the BGPA or was serving Spanish-speaking applicants who would benefit from testing with the BEAG was asked to participate. Testing sessions were to be conducted by experienced, Spanish-speaking test administrators. Beginning in September 1974, test administrators were instructed to: (1) administer and score the BEAG in accordance with the directions and procedures in the May 1974 Spanish language edition of the Manual for the GATB, B–1002, Section I, (2) note testing problems encountered in each testing session, (3) keep a record of the number of individuals tested with the BEAG, and (4) recommend improvements in the directions for administering the test battery.

At the end of the evaluation period in July 1975, each participating State agency was to prepare a report consolidating this information and forward it to the National Office. These reports would, in turn, be reviewed to develop a final set of administration directions and procedures which would meet the needs of all BEAG users.

DEVELOPMENT OF MATERIALS

The Test Research Center of the California State Employment Service prepared the BEAG materials for operational use. These included the May 1974 Spanish language edition of the Manual for the GATB, B–1002, Section I: Administration and Scoring; Test Booklets I & II, Forms A & B; and Part 8. State agencies had the option of choosing the Spanish language answer sheet developed by NCS or INTRAN Corp. for use with the BEAG.

PARTICIPATING STATES

Thirty-one State agencies and the District of Columbia Manpower Administration requested BEAG materials. The remaining State agencies did not participate either because they did not have a sufficient number of Spanish-speaking applicants or because they lacked qualified Spanish-speaking test administrators.

RESULTS AND CONCLUSIONS

Twenty State agencies administered the BEAG to more than 2578 individuals during the evaluation period, as shown in Table 19. The other States with BEAG materials did not install the BEAG for various reasons—not enough Spanish-speaking applicants who could benefit from BEAG testing, staffing problems, agency budget cut-backs, changes in agency priority services, etc. Nonetheless, the tested group represented a cross section of the Spanish-speaking community throughout the mainland and Puerto Rico.

The detailed reports submitted by the 20 participating State agencies supported the conclusion that it was desirable and feasible to develop a revised set of administration directions and procedures to meet the needs of BEAG users on the mainland and in Puerto Rico. A test research team from the New York State Employment Service worked on the project of synthesizing the reports in the early months of 1976. Their recommended revised edition, and a report indicating the basis for making each specific change, were sent to each State agency which had made substantial comments on the tryout, requesting final comments. These comments were then incorporated in an August 1976 draft which was given a final intensive review by experts in the California, New York, and Puerto Rico agencies. A final consensus was achieved at a December 1976 conference in Washington.

The final BEAG directions for administration have an extensive research base, derived from careful initial construction, tryout and review; revision based on nationwide tryout on a variety of Spanish-speaking groups; and final concurrence of Spanish-speaking teams of technical experts from California, New York, and Puerto Rico. As such, we may conclude that these directions will be suitable throughout the mainland and in Puerto Rico as the standard set of directions for administering the new standard Spanish language version of the GATB.

Table 19

BEAGs Administered during Nationwide Tryout: September 1974-July 1975

Region	State	BEAGs	SATBs
II	PUERTO RICO	1249	264
	NEW YORK	53	
	NEW JERSEY	303	
III	DISTRICT OF COLUMBIA	291	
IV	FLORIDA	20	
V	ILLINOIS	36	
	MICHIGAN	23	
	WISCONSIN	9	
	MINNESOTA	2	
VI	NEW MEXICO	45	
	TEXAS	100	68
	LOUISIANA	6	
VIII	COLORADO*	+	
	WYOMING	3	
IX	NEVADA	54	
	ARIZONA	25	
	CALIFORNIA*	+	
X	WASHINGTON *	+	
	IDAHO *	+	
	OREGON	26	
Totals		2245+	332

* Tested, number not reported.

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